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**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

In the Matter of the Application of Pacific Gas  
and Electric Company for Approval of its  
Electric Vehicle Infrastructure and Education  
Program.

A.15-02-009  
(Filed February 9, 2015)

U 39 E

**PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)  
ELECTRIC VEHICLE CHARGE NETWORK  
QUARTERLY REPORT, SECOND QUARTER, 2017**

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Dated: August 1, 2017

Attorney for  
PACIFIC GAS AND ELECTRIC COMPANY

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QUARTERLY REPORT, SECOND QUARTER, 2017**

Pursuant to Ordering Paragraph 20 of D.16-12-065, Pacific Gas and Electric Company (PG&E) hereby submits the attached EV Charge Network Pilot Program Quarterly Report for Second Quarter, 2017. Per D.16-12-065, the Report is being served on the service list for A.15-02-009 as well as the members of the Program Advisory Council.

Respectfully Submitted,

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Attorney for  
PACIFIC GAS AND ELECTRIC COMPANY

Pacific Gas and Electric

# PG&E Electric Vehicle Charge Network Quarterly Report

Report Period: April 1, 2017 – June 30, 2017



Together, Building  
a Better California

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# 1. Executive Summary

## 1.1 Charge Network Program Overview

PG&E’s EV Charge Network Program (Program) was approved on December 15, 2016 through a unanimous vote of the California Public Utilities Commission (Commission). The purpose of the program is to increase access to charging for electric vehicles within PG&E’s service territory. The Program intends to install 7,500 charging ports over a three-year period focusing on two key market segments, workplaces and multi-unit dwellings. The Program includes deployment targets of 15% in Disadvantaged Communities (DACs), as well as in 20-50% in Multi-Unit Dwellings (MUDs). These targets aid in facilitating market entry for previously underserved communities and market segments. For participating site hosts, the program is organized into two main ownership options: “EV Charge Owner” and “EV Charge Sponsor.”

**EV Charge Owner:** The majority of the electric vehicle service equipment (EVSE) (a minimum of 65%) will be owned by site hosts who are PG&E non-residential customers that have EV charging stations installed on their property. All site hosts may choose to participate under this program option. For these installations, PG&E will install and maintain the EV service connection (make ready infrastructure) to support their use. The site host will be responsible for buying and installing the EV charging station. At these locations, rebates will be offered to site hosts for the EV charging station. The rebates will be paid after the charging stations are installed and operational.

**EV Charge Sponsor:** At the discretion of the individual site host, PG&E may be requested to install, own, and maintain up to 35% (2,625) of the EV charging stations deployed. These EV charging stations will be installed in a turnkey operation to maximize site host convenience. EV Charge Sponsor site hosts must be multi-unit dwellings (MUDs) or workplaces located in disadvantaged communities (DACs).

## 1.2 Summary for Quarter

The following section provides a brief summary of the milestones and actions performed throughout the quarter. This includes site host interest, a summary of the Program Advisory Council (PAC) meeting, and a description of all relevant Advice Letters filed. Once the EV Charge Network launches to customers, this section will also provide standard metrics including the number of customers that applied to the EV Charge Network, number of customers in the design and construction phase of the project, and the number of operational charging stations. In addition, the section will include a breakdown of budget activities and a list of issues encountered in implementing the EV Charge Network and a resolution or lesson learned for each issue.

### Site Host Interest

In January of 2017, PG&E launched the first of its EV Charge Network webpages. This webpage was designed to provide basic programmatic information while stakeholder feedback is gathered to refine the larger marketing, education and outreach plan. In addition to the webpage, PG&E launched an interest form which allows customers to indicate their interest in participating in the program. By the end of the second quarter of 2017 (June 30, 2017), 312 organizations indicated their interest in participating in the EV Charge Network Program. Of these organizations, 65% were workplaces and 35% were MUDs.

FIGURE 1.1: SITE HOST INTEREST BY MARKET SEGMENT

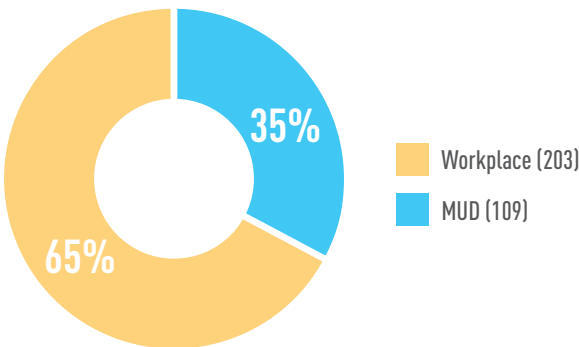
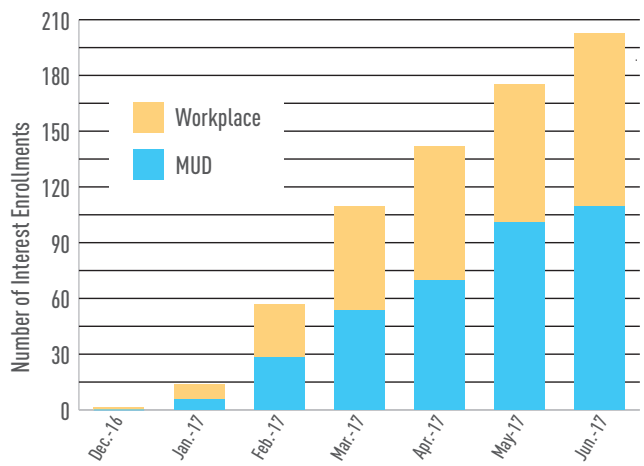


FIGURE 1.2: NUMBER OF INTEREST ENROLLMENTS BY WEEK



Program Advisory Council (PAC)

On June 14, 2017, PG&E held its second PAC meeting. Approximately 20 organizations, representing stakeholders from industry, government, and NGOs, attended in-person and online. This meeting provided revised updates on PG&E’s marketing, education and outreach, site selection and construction, and EVSE procurement. Additionally, PG&E gave an overview of site host billing and load management, and proposed a process to maintain the ‘spirit of the definition’ of disadvantaged communities for workplaces of high revenue companies.

Procurement

PG&E opened its first Request for Qualification (RFQ) for the EV Charge Owner program on April 14, 2017. This qualification process is scheduled to occur quarterly and PG&E will use the process to vet vendors who wish to sell EVSE hardware and software to site hosts as qualified vendors in PG&E’s EV Charge Network program. On May 12, 2017, PG&E closed the RFQ and began vendor evaluation. The first vendors which did not pass the evaluation process were alerted on June 1, 2017. Vendors who did not fail the initial evaluation continue to be evaluated by PG&E for data transfer capabilities, technical requirements, and proposed installation designs. Through this process, PG&E will determine the final list of qualified

vendors and equipment which may be marketed to site hosts under the EV Charge Owner program. Vendors, their websites, and qualified hardware will be publicly posted on PG&E’s EV Charge website once final approval is granted to vendors.

Advice Letters

PG&E was required to file three Advice Letters as part of the Commission’s Decision approving the EV Charge Network. These letters focus on three areas: the first establishes the balancing account tracking program costs, the second summarizes the program and rate options, and the third provides the revised marketing, education and outreach plan. PG&E previously filed its first two advice letters in the first quarter of 2017. PG&E filed its third Advice Letter related to the revised marketing, education and outreach plan on May 2, 2017 with 5064-E the “Education and Outreach Proposal”. PG&E submitted a supplemental Advice Letter on June 28, 2017 upon request, and the CPUC approved the Advice Letter on July 13, 2017. More details on PG&E’s Advice Letter for marketing, education and outreach are detailed in Section 2 of this report.

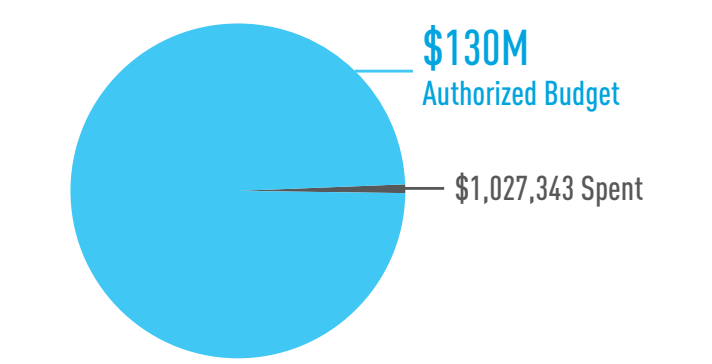
Budget

In Q2, PG&E spent \$914,919 for a total YTD program spend of \$1,027,343 out of the \$130M authorized budget. \$483,990 of the funds were spent on IT program development, and \$430,929 were focused on program implementation and administration. Subsequent reports will be segmented into the following areas:

- Marketing, Education and Outreach
- Design and Engineering
- Construction
- Rebates
- Administration and Implementation



FIGURE 1.3: TOTAL BUDGET SPEND TO DATE



1. The Commission approved the EV Charge Network in D 16-12-065.
2. Disadvantaged Communities are defined as the top 25% most impacted census tracts within PG&E’s service territory per the CalEnviroScreen3.0, or the latest version.
3. See ordering paragraph 18 and 19 of D 16-12-065.

Key Barriers

PG&E began trial siting activities with several customers identified through the online site host interest form. PG&E performed preliminary review of submitted sites for feasibility and to identify barriers to siting processes. See Section 5 for more information on these activities.

Issues identified arising from PG&E’s trial siting process include ADA compliance, site host response time and collaboration, and easement and permit processes.

ADA requirements may be a limiting factor in the placement of charging stations in site host trials, and confusion over ADA compliance with newly introduced standards has complicated the site host process. PG&E discussed ADA compliance questions during its June 14 PAC meeting, and will continue to seek clarification on the effect of new codes on ongoing projects.

PG&E had planned to have 10 trial sites in the plan and design phase by the end of June 2017, however slower response times from customers due to scheduling conflicts and site complications proved challenging and this target was not met, with 3 of the target of ten trial

sites in the plan and design phase by June 30, 2017. PG&E will continue to work with its pipeline of trial site candidates to reach its target of 10 trial sites throughout July.

One trial site currently in the plan and design phase requires an alternate easement to that proposed by PG&E, potentially adding additional time to the siting process. Diverging from PG&E’s established easement processes for the EV Charge Network may result in unanticipated delays to construction. PG&E is continuing to work with the trial site and will take lessons learned to mitigate added process time when implementing the program at scale.



## 2. Customer Outreach and Enrollment

### 2.1 Charge Network Education and Outreach

PG&E received approval for its marketing, education and outreach (ME&O) advice letter on July 13, 2017. The Advice Letter and Supplemental Advice Letter provide information on PG&E’s implementation strategy, and continued involvement from stakeholders is a key component of the plan. An overview of the Advice Letter is provided below.

#### Advice Letter Overview:

In the ME&O Advice Letter, PG&E provides insight into the EV market and an overview of key issues for implementation within the target sectors of the EV Charge Network – workplaces, multi-unit dwellings, disadvantaged communities, and EV drivers. PG&E will conduct customer research to help develop the most effective messaging to gain participation in the program. In addition to research, the development of an implementation plan will help set the tactics, timing for customer acquisition, and establish our test and learn approach.

PG&E’s ME&O plan promotes the EV Charge Network using both a targeted approach to achieve direct program participation, and broad-based outreach intended to increase EV awareness and educate EV drivers on EV charging options. PG&E will also continue to build out its web content and online web portal, so that customers can educate themselves on the program and have access to the online application. Web content will be uniquely aimed at each target audience to improve customer engagement and understanding.

#### EV Charge Network Webpage and Interest Form

In Q1, PG&E launched its EV Charge Network webpage and interest form, which has seen steady customer activity and interest submissions from potential site hosts. A summary of site host interest is included in the figures and tables below.

#### EV CHARGE LANDING PAGE:

The EV Charge webpage received 2,490 views in Q2 for a total of 4,970 since its launch in December 2016.

#### EV CHARGE INTEREST PAGE:

From launch through June 30, 2017, 312 organizations indicated their interest in participating in the EV Charge Network. Of this group, 21% are located in disadvantaged community eligible census tracts. Approximately two-thirds (65%) of total sites are workplaces while one-third (35%) are multi-unit dwellings. The sites span the service territory geographically, but the majority are located in PG&E’s “Central Coast” Region which spans South San Francisco to San Luis Obispo, including the South Bay Area (See Figure 2.2).

FIGURE 2.1: SITE HOST INTEREST COMPOSITION

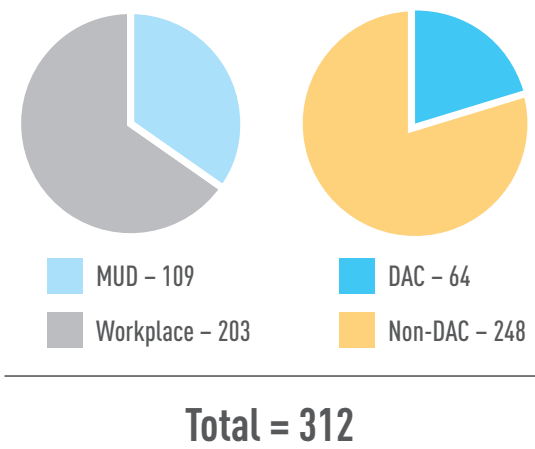




FIGURE 2.2: SITE HOST INTEREST GEOGRAPHY

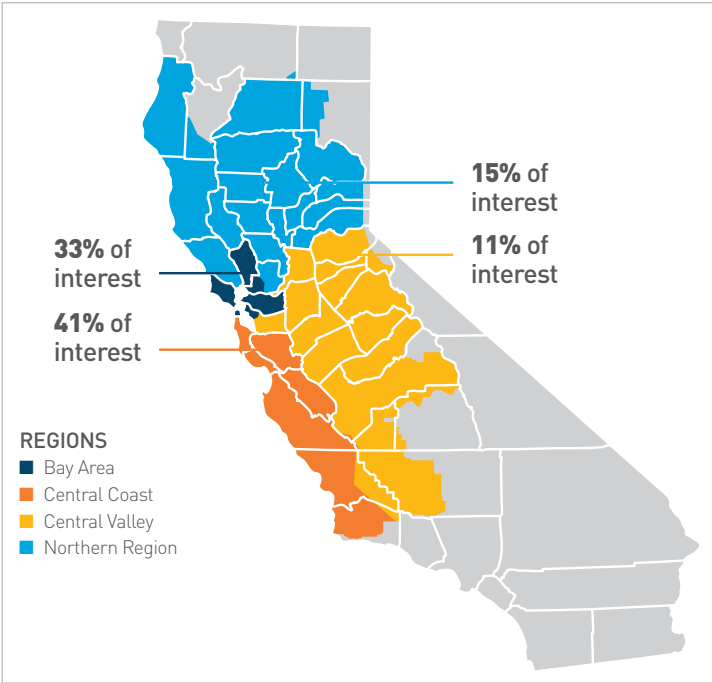
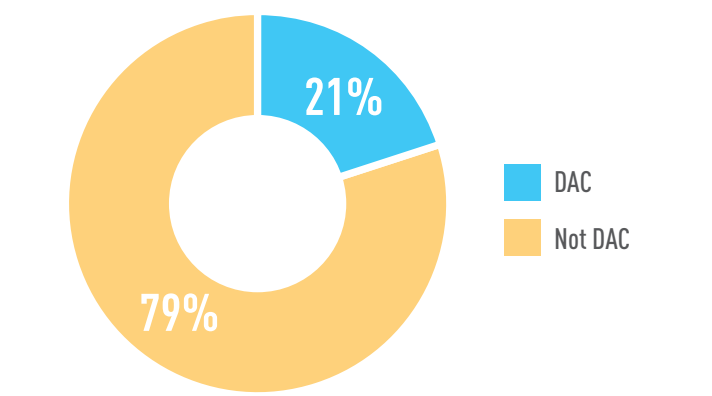


FIGURE 2.3: SITE HOST INTEREST IN DACS AND NON-DACS



Though PG&E has not yet launched marketing efforts, potential sites have expressed their interest. Of those submissions, customers indicated they heard about the program through:

TABLE 2.1: SITE HOST SOURCE OF PROGRAM KNOWLEDGE

Other	37%
PG&E General	20%
PG&E Website	16%
External Group	16%
PG&E Rep	11%

2.2 Outreach Events

PG&E’s ME&O Advice Letter was approved July 13, 2017. Outreach planning will ramp up throughout Q3 of 2017.

# 3. Electric Vehicle Supply Equipment Procurement

## 3.1 Procurement Process

PG&E is conducting both a Request for Qualification (RFQ) and Request for Proposal (RFP) process to determine eligible electric vehicle service equipment (EVSE) packages that will be available to customers through the EV Charge Owner program. EVSE packages are inclusive of EVSE hardware, software, and network services. The RFQ will identify vendors that offer EVSE packages that meet PG&E’s minimum hardware, software, and network requirements. PG&E will not limit the list of suppliers; all supplier EVSE Packages that meet the minimum requirements will be qualified. In addition, suppliers will have the option to qualify EVSE packages every 3 months with quarterly RFQs.

Vendors qualified through the first RFQ will also be eligible for the RFP process, held in Q3, 2017, which will select vendor(s) for the EV Charge Sponsor portion of the program. This process is intended to receive competitive price proposals for supplier EVSE Packages that meet PG&E’s minimum requirements for the RFQ process and additional evaluation criteria to participate in the EV Charge Sponsor option of the Program. These criteria will include, but are not limited to, an evaluation of price, quality of bid, supplier diversity, environmental commitment, and financial stability. PG&E intends to award a contract to a more limited number of suppliers than those identified in the RFQ.

## 3.2 RFQ — Q2

### Summary

PG&E evaluated vendors on the following criteria during the first quarterly RFQ process which commenced in Q2, 2017:

- Ethics
- Safety

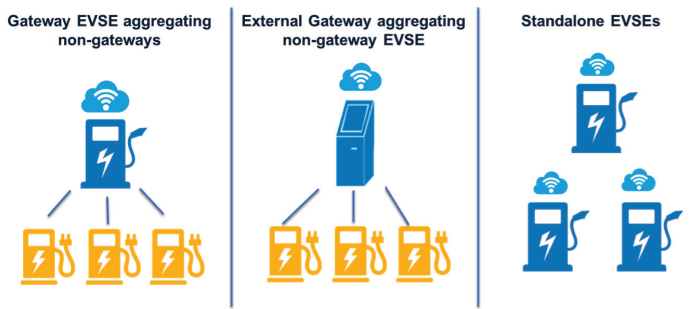
- Supplier Responsibility
- Supplier Requirements
- Technical Requirement
- Cybersecurity
- Financial

15 vendors “passed” the initial gate of the RFQ and have gone on to be evaluated for additional data transfer capabilities. Nine of the 15 vendors are Qualified Vendors for SCE’s Charge Ready Pilot.

### Technology

PG&E received a variety of hardware configurations during the RFQ process and continues to work with vendors to understand their proposed site design for a sample project of 10 L2 charging ports. Configurations included gateway, non-gateway, and standalone EVSEs in both ground and wall-mounted positions. Furthermore, some vendors rely on external gateway devices, which do not function as EV chargers, to aggregate the non-gateway EVSEs via a local wifi signal which then communicates with their network. The figure below provides a description of the three configurations submitted as part of PG&E’s RFQ.

FIGURE 3.1: EVSE PACKAGE CONFIGURATIONS



## Base Charger Cost

The complexity of these configurations is relevant as it pertains to the calculation of the base charger cost and thereby the rebates for site host owners which will lower the cost of EVSE hardware and software. If, for example, the base charger cost was determined by the least-cost non-gateway unit, rebates would not fully address the gateway EVSE costs which are necessary to create a functional set of 10 charging ports.

For this reason, PG&E requested vendors submit additional data on a proposed installation of 10 ports, utilizing their equipment in the least-cost configuration. PG&E continues to evaluate this data and site host technology through the close of Q2, 2017 and is coordinating with the CPUC Energy Division to establish a “base charger cost” methodology.

## Additional Information:

PG&E requested additional information from vendors during the RFQ process to solicit their feedback and experience from other projects. We are grateful to the vendor community for providing this feedback and hope to continue open lines of communication. Select feedback has been provided below. When possible, verbatim comments are provided but in some cases the content has been summarized.

## Energy Star Certification:

- 1 hardware supplier is currently Energy Star certified
- 8 vendors expressed that their hardware suppliers are pursuing Energy Star certification

## Maintenance:

- “Maintenance services are critical... having a proven and reliable company familiar with this industry is crucial. Outsourcing to Joe’s Electric does not work.”

## Interface:

- “The customer charging tools must be simple and easy to interact with... the positive experience of the driver [can lead to them] endorsing the EV ‘product’ to others.”

## Site Host Selection:

- “PG&E [can] streamline the pre-qualification and approval process by being as prescriptive as possible for type, size and other attributes of suitable site hosts.”
- “Site recruitment/acquisition is a significant challenge... [by requiring] minimum numbers of charge stations to be deployed, many otherwise well-qualified and strongly interested sites fall out of consideration.”
- “Keeping the timeframe for program approval under 1 week keeps momentum moving forward to complete the project in a timely manner.”

## Network:

- “It is essential to have good cellular communications coverage to ensure the EVSE can be remotely controlled.”
- “To ensure continuity of working infrastructure and long-term success across PG&E’s service territory, PG&E should emphasize strict adherence to open standards.”
- “Supports open, international standards at every step in the system so that no assets become stranded, cost avoidance associated with multi-vendor interoperability, compatibility and patent/discriminatory licensing issues.”
- “Using separate, non-site-host owned internet connectivity for charge stations will maximize network reliability.”
- “Recommends consolidation of requirements under the Rule 21 requirements for a more seamless integration. Additionally, the forthcoming recommendation from the CPUC/ARB VGI working group should be taking into consideration.”



### Charging:

- “[Recommend] automated charger load management that ‘right-sizes,’ [allows] more vehicles to plug in than there is electrical capacity to charge them... This can be an important cost savings, especially at scale.”

### Education:

- “Simple, clear, and thorough educational materials are important for site host education.”
- “Advanced potential site host education is highly necessary. Most site hosts have little experience with: operations and maintenance planning, communication with drivers, managing vehicle rotation, demand charge considerations, etc... Until a potential site host has a sense of these considerations they’re not able to make adequately informed decisions about how to move forward with charging station and software planning and acquisition.”

### Ownership:

- “The funding entity needs to own the chargers if they want performance, reliability and continuity (we understand there are mitigating circumstances with this in the utility world).”
- “Site hosts need options to monetize the chargers to get them vested.”

### Rebate:

- “PG&E should offer equal rebate / sponsor amounts across all hardware options, even when those options vary in features and price.”

### Program Advisory Council:

- “Found the Program Advisory Board to be a positive process in the pilot stage of the Charge Ready program and we look forward to participating with PG&E.”

## 3.3 Procurement Next Steps

Once a base charger cost methodology is established, and vendors complete remote data transfer testing, a final list of approved vendors will be listed on PG&E’s website and selected vendors may begin marketing the EV Charge Owner program at that time.

PG&E intends to hold its onetime RFP for the EV Charge Sponsor program in Q3, 2017. Additional evaluation interviews and tests will be conducted with finalists and the list of selected vendors will be smaller than the list of vendors qualified through the RFQ. In addition, PG&E intends to hold the second RFQ in Q3 2017 followed by the third RFQ in Q4. The figure below provides an overview of this schedule.

FIGURE 3.3—PROCUREMENT TIMELINE



## 4. Electric Vehicle Charging Utilization and Load Management

### 4.1 Overview of Utilization and Load Management

Once the first charging stations in the EV Charge Network are operational, PG&E will summarize utilization and load management data and observations. Data will include items such as utilization rate by site and charger type, charger uptime, pricing, and charging load profiles. Additional data and metrics will be reported in the Appendix.

At this time, PG&E does not have any installed EV charging stations, and therefore, does not have any utilization or load management data to report.

### 4.2 Development of Load Management Plan Guidelines

PG&E is currently developing the framework and guidelines for the load management plans that site hosts will need to provide. PG&E intends that load management plans should seek to achieve some or all of the following goals: (1) provide **grid benefits** by integrating variable renewable resources and supporting the electric distribution system, (2) provide **customer benefits** by supporting customer choice and enabling fuel cost savings, and (3) provide **innovation benefits** by encouraging innovations in the EV charging market and informing future development of vehicle-grid integration.

At the June 14 meeting of the Program Advisory Council, PG&E provided an overview of load management plans and the above benefits that PG&E hopes the load management plans will achieve. PG&E discussed potential frameworks for load management programs and strategies that site hosts could use to implement their load management plan. Potential frameworks may include using existing Demand Response programs or creating a new load management framework specifically for the EV Charge Network. Following the meeting, PG&E requested that members of the PAC provide feedback on load management and provided a template for

comments. The template included questions on the load management goals, the frameworks for consideration, and potential load management strategies. PG&E requested that members of the PAC provide their feedback by July 21.

PG&E also presented information on load management for the suppliers that have passed the initial stages of the RFQ in a webinar meeting on June 29. Similar to the PAC meeting, PG&E provided an overview of the goals and benefits that should be achieved through load management, potential program frameworks, and strategies that site hosts could use to implement their load management plans. PG&E also provided a template for comments and requested feedback from the suppliers by July 28.

PG&E will review all feedback received from the PAC and from the suppliers that have passed the initial stages of the RFQ and provide a summary of the feedback at the next PAC meeting in the third quarter of 2017.

### 4.3 Utilization Data from Suppliers

PG&E is currently developing its systems to collect data from all sites in the EV Charge Network. PG&E led a webinar meeting on June 27 with the suppliers that have passed the initial stages of the RFQ to discuss additional information on the site data and charging session data from the charging stations. The meeting included information on charging session interval data, formats for unique identifiers, and API data transfer requirements.

Following the meeting, PG&E provided names and formats for all data elements that the suppliers will need to provide, a sample of API data mapping, and a template for sample data. PG&E requested that all suppliers provide sample data for their charging stations using the template to confirm their ability to provide the data in the formats requested. PG&E requested the sample data by July 7.



## 5. Trial Sites

In May 2017, PG&E began outreach to trial site candidates selected from its interest registrations list. Through June 30, 2017, PG&E conducted 13 site host introduction calls, 7 of which moved to site walks and 3 have moved on to step 3, design and contracting. The trial sites were screened based on stated size, market segment, and DAC status prior to feasibility reviews and in-person outreach.

For the purposes of selecting trial sites, only registered sites with larger numbers of tenants or employees were selected, with a minimum of 50. This initial screen was intended to filter out registered sites that may not be able to support PG&E’s 10 port minimum requirement. Greater numbers of potential EV drivers are also expected to increase charger utilization.

The list of potential trial sites were selected based on market segment, location and DAC status. In order to maximize lessons learned pre-launch, the list of sites was intended to be as diverse as possible with a mix of workplaces and MUDs in both DAC and non-DAC census tracts. Sites were prioritized in and around the Bay Area to ensure the project management team could participate in site walks.

PG&E aims to install charging stations at 10 trial sites in 2017 prior to its official program launch, in order to improve its end to end installation process and prepare to begin installing at greater scale. Trial site status, including cost data, will be included in our 3rd Quarterly Report.



## 6. Operations

PG&E is still in the pre-launch phase of its EV Charge Network operations and therefore does not have data to report at this time. This section of the report provides an outline of what operations metrics will be reported starting in Q1 of 2018.

### 6.1 Charge Network Program Operations

Interested site hosts will be guided through six steps to participate in the EV Charge Program:

- 1. Info & Application:** Site hosts express their interest and apply online at [www.pge.com/evcharge](http://www.pge.com/evcharge).
- 2. Approval:** PG&E reviews the site and determines eligibility for the program.
- 3. Design and Contracting:** If selected, PG&E will create a preliminary design which is shared with the site host who then selects their equipment for the project and the ownership model (Charge Owner or Charge Sponsor).
- 4. Final approvals:** If the site host approves the designs, they will sign their approval, the easement for PG&E to access their property, and the participation agreement.
- 5. Activation:** Once construction is complete, the charger receives electricity, and an inspection has occurred, PG&E will issue rebates or collect participation payments depending on the ownership model selected by the site host.





## 6.2 Status Update

Through the end of Q2 2017, PG&E actively reviewed the 312 interest statements received from prospective site hosts and determines their eligibility in the program on a rolling basis. As PG&E approves sites, performs design and contracting, and completes additional operations steps, we will track and report on the number of sites at each stage. As data is made available, PG&E will report on:

- Average installation costs (per plug)
- Actual and projected installation costs
- Actual and projected infrastructure costs
- Explanation of any significant differences between projections and actuals
- Review of cost drivers and remedy actions as needed
- Total estimated pilot costs and remaining budget

## 6.3 Operational Metrics for Quarter

As data is made available, we intend to provide the following metrics:

- Total number of applications received
- Number of approved and confirmed sites
- Number of applicants rejected
- Number of applicants withdrawn

## 6.4 Costs

As data is made available, we intend to provide the following metrics:

- Total pilot costs
- Average cost per site (EV Charge Owner)
- Average cost per port (EV Charge Owner)
- Average cost per site (EV Charge Sponsor)
- Average cost per port (EV Charge Sponsor)

## 6.5 Installation Process Time

As data is made available, we intend to provide the following metrics:

- Average time for each installation step
- Average total installation time

## 6.6 Charging station request

As data is made available, we intend to provide the following metrics:

- Number of charge ports requested
- Number of total charge ports approved
- Average number of charge ports approved per site

## 6.7 Supplier Diversity

PG&E is committed to diversity in the workplace and with the companies with which we do business. Our Supplier Diversity program provides vital opportunities for businesses owned by women, minorities, service-disabled veterans and lesbian, gay, bisexual and transgender (LGBT) individuals. Supplier diversity will be scored as part of the RFQ and RFP process for the EV Charge Program and will be incorporated in any contracts for services as part of this program.

## 6.8 Collaboration Efforts with Complementary EV Programs

PG&E will track any events or collaboration with external organizations or government entities in connection to the EV Charge Network as those partnerships arise.

## 6.9 Disadvantaged Communities Outreach Events

PG&E has not yet engaged in any outreach events or DAC-targeted events but we will track their occurrence in this report.





## 7. Program Advisory Council Feedback

The second PAC meeting was held on June 14th and included a diverse group of stakeholders. Eighteen organizations attended including representatives from the EV charging station industry, non-profits, government entities and community choice aggregators. The table below describes the distribution of the stakeholders present at the meeting.

TABLE 6.1 – DISTRIBUTION OF PG&E PAC MEMBERS

ORGANIZATION TYPE	NUMBER OF CONTACTS
Electric Vehicle Service Providers	8
Non Profit	2
Government	3
CCA	2
Industry Group	2
Installer	1
TOTAL	18

PAC members were active in discussions and comments throughout the meeting. Overall most questions and comments sought clarification of information presented. Conversation focused on how to communicate cost of installation, ownership and electricity to site hosts, questions surrounding ADA compliance, and the trial sites process.

PG&E captured stakeholder comments during the meeting and also collected feedback by email submission after the meeting. Feedback was organized into the seven categories discussed during the meeting: General Program Comments, EV Market, Education and Outreach Plan, Site Selection and Construction, Procurement, Load Management, and Disadvantaged Communities. PG&E has provided responses to the questions and comments in the Appendix.

## 8. Conclusion

In the second quarter of the EV Charge Network Program, PG&E continued to receive higher than anticipated registrations of interest from potential sites within its service territory, despite minimal marketing, education and outreach efforts prior to receiving CPUC approval. PG&E completed its RFQ vendor evaluations and throughout the quarter engaged with successful vendors to work toward a standard unit valuation methodology for gateway/non-gateway EVSE models. PG&E will be able to report out on its established base cost in Q3 conjunction with the initiation of its formal outreach efforts.

PG&E actively engaged with potential trial sites and is on target to achieve its aim of installing at 10 trial sites by the end of 2017. By the end of the second quarter, three trial sites progressed to the plan and design phase of program implementation. Lessons learned through installation of trial sites will contribute to more effective installations as PG&E ramps up its operations beginning 2018.

PG&E looks forward to advancing trial sites through the enrollment, design and deployment process in the second half of 2017 in anticipation of officially launching the program to customers. PG&E also values the feedback and input stakeholders have provided through the Program Advisory Council meetings, and looks forward to continued collaboration with participants.



## 9. Appendix

### 9.1 Summary of Program Advisory Council Comments and PG&E Response

The following PAC members provided comments during or after the meeting:

PAC MEMBER NAME	PAC MEMBER ORGANIZATION
Noel Crisostomo	California Energy Commission
Audrey Neuman	California Public Utilities Commission
Newonda Nichols	ChargePoint
Renee Samson	ChargePoint
Enid Joffe	Clean Fuel Connection
Carolyn Funk	FreeWire Technologies
Jamie Hall	General Motors
Tom Ashley	Greenlots
Dan Genter	Marin Clean Energy
Phil Villagomez	Shell
Daniel Urban	Siemens
John Supp	Silicon Valley Clean Energy
Tara Martin-Milius	Silicon Valley Clean Energy
Beau Whiteman	Tesla Motors
Joel Espino	The Greenlining Institute
Eric Borden	The Utility Reform Network

## 9.2 Direct Program Advisory Comments

The table below describes the comments received from PAC members and PG&E's response.

### 1. Market Update

COMMENT	RESPONSE
What is the ratio between BEVs and PHEVs in PG&E's service territory?	Typically higher ratio of BEVs to PHEVs in PG&E's service territory.

### 2. Marketing, Education and Outreach

COMMENT	RESPONSE
Is there coordination with CCAs in PG&E's service territory for this program?	Yes. CCAs are key to the overall regulatory process. They've been part of our filing and settlement and are incorporated in partnerships for this program. Once our marketing plan is accepted we will increase CCA cooperation. We would love to have ongoing cooperation and input on how to bring out best from these partnerships. We are very interested in starting to pursue this now that our ME&O AL has been submitted.
If we have upcoming ride and drive events etc., would that be an opportunity for collaboration?	Yes this is a partnership area we want to explore.

### 3. Site Selection and Construction

COMMENT	RESPONSE
Do the sites interested in applying already have chargers installed? What are you seeing in terms of numbers of chargers sites hosts want to have installed?	Yes, of the potential trial sites, one did have 2 chargers previously installed. We are hoping to install 10 chargers per site, and most sites we have seen want more than 10. E.g. Pleasanton wanted up to 20 chargers. Some of that is self-selection for trial sites; we're looking for good locations to test out our process. A threshold question is if they can support 10 chargers. The MUD we surveyed had 50 EV owners.
PG&E states that one of its filters for trial sites is that they need to state they have 50 or more employees/tenants. Why do you have this requirement?	We have some sites registered that have 5 or 10 employees. That probably won't work due to the 10 charger minimum. The 50 employee/tenant minimum is not for the large program yet, but rather for trial sites before going to scale.

COMMENT	RESPONSE
Is the cost of the entire project shared between PG&E and the site host? The quoted cost is very high for the installation plus the unit cost, are we sharing this cost with customer?	We are not sharing cost of the make-ready; we will bear that in full.
Will you select vendors this month? Will trial sites have option to select from approved vendors?	Yes, we should have qualifications complete for the trial sites to select from. They will flow through regular process.
Are you going to evaluate the trial sites? What are the measures you will use to evaluate the process?	We are going to evaluate the trials, and cost is a significant factor. We want to see what differentiates those sites and ascertain cost of those factors at the different site types.
Will PG&E do all the work up to the charger and the installation of the charger?	Yes, PG&E will construct and pay for the make-ready in all cases and the EV charger equipment in the case of the Sponsor option.
For installation of the EVSE, will they still have to conform to IBEW standards?	Yes, if PG&E installs the charger under the Sponsor option. Under the Owner option, the customer will determine who conducts the installation. However, this installation will be inspected by PG&E before a rebate is processed.
Are you going to track the costs for a non-PG&E owned installation i.e. the EV Charge Owner installation costs?	No, we will track make-ready costs but we don't have a customer side cost. It is up to them to provide that info.
Do you know how many EVs are at the sites you have looked at already?	Of the 3 sites, one already has EVSE installed at the site. All the sites have EVs.
For the trial sites, have all hand raisers that are now potential trial sites come through the web portal you have on your website?	Yes.
Regarding PG&E's decision to have a minimum charger requirement of 10 ports: As you expand program, if you continue to have challenges for number of spots will you have a contingency and be open to lowering this requirement?	Yes, we will review. However, if we reduce the minimum charger requirement to 2 or 3 chargers per site, we won't meet our goal for 7,500 ports. If MUDs can't meet this goal we will need to discuss our approach and make a decision with input from the PAC.

COMMENT	RESPONSE
Would you be open to mobile charging stations? There is no CEC requirement to have fixed stations. How about charging stations that could be partially fixed?	Not in this program. The program design is not for mobile infrastructure.
Are there any ADA challenges you've had so far with your trial sites?	Yes. This is something we need to work on with the site hosts. We will try to use existing ADA but there will be some restriping or addition of handicap access. We are already being challenged by this. This is a new requirement now in 2017.
Are you sticking to rental properties or condos as well? ADA would not apply on latter for deeded properties I believe? At my development I have my parking space and it is mine.	Both. Public or common use includes privately owned spaces.
Are you considering ability for these program investments to be grown in the future? Are you encouraging investment to be increased over time without huge costs? Could you go back and do more installations? I don't want to change this process and we want to see you as close to 7,500 as possible. But this is something to also think about for future and we want to bring this up as an opportunity to evaluate.	We got this question at our first site host visit. We are pushing them to put in 20 now rather than put in infrastructure for future that may not be used. We ultimately want the 7,500 ports to be within budget which wouldn't happen if we build out infrastructure that will not have a charging station installed. It's challenging to figure out how to balance future interest and specific program goals.

### Comments:

- Request that whenever we look at data for both the Owner and Sponsor models we request the site host provide information on their overall cost. I worry that at the end we won't have the data we will want later.
- There is something in process to reconvene with DSA to ask questions on guidelines and interpretations on new ADA guidelines. EVCA initiated this, there is no one to ask per say on interpretation of these guidelines and the whole industry is talking about this.
- We are in a situation where no one knows what the exemption is for ADA. We don't have answers yet. A new article 625 came out and they are hosting training meetings throughout the state. This would be a good subject for that.
- Want to share experiences with PG&E from participant installation projects of 10-20 chargers.

## 4. Procurement

COMMENT	RESPONSE
For the second option that allows for PG&E ownership of the chargers will the site host have any choice on the vendor?	Yes. We will have more than one vendor to choose from. The qualifications process is more complex but there will still be choice from a more reasonable number.
Do you expect more availability of choice in owner version than in PG&E-owned?	Yes.
How do you expect to grow after this program? Do any one of the 3 models provided lead into future expansions?	This depends on how the site host is looking out to the future and will lead to their choice of equipment. We will take those qualifications into account as well. It's also unclear what the best situation is for future expansion. We are looking for vendors to supply details of a sample project for each available type, with a diagram.
Is the volume pricing you included in the RFP where you are specifying certain volumes vendors need to be able to supply?	For the RFQ we allowed them to provide any thresholds they had. For the RFP we will identify tiers for this.
Through customer lens, in MUD DAC space where it is 100% base cost: Are we able to guarantee that one of the 200+ options will come in at fully covered cost? Are we able to come in and guarantee at 100%?	Yes this is the importance of this base unit cost question. MUD in DAC gets a 100% base cost rebate. Once we know what the base cost is, we can put a dollar value on this. Then they can go on the vendor sites and research what that would mean for their instance. We should be mindful on how that is presented to the customer. We don't want to be misleading.
Are there going to be any options for participants not offering annual service fees?	Everyone will have to have network capabilities. In the Sponsor model, the utility covers it. In the Owner model, the site host is responsible for that.
Are network costs presented to potential site hosts? If this info isn't available you will have difficulty with uptake.	This is something we need to work on with the vendors. There is a range of costs. We need to establish how we are both going to present this material in a straightforward way.
Will the base cost change or is it only determined once?	It will move around with the RFQ, but we are exploring if that is the best thing to do. We will discuss at the next PAC and with the CPUC.

## Discussion:

### EXPENSE TO SITE HOST

**Participant:** You don't have different base costs like SCE. I was surprised for Edison that there is a vendor base cost but then the customer has to negotiate with vendors for an actual cost.

**PG&E:** Actual costs will vary. Customers will purchase directly with the vendor so we don't have a say on final price.

**Participant:** Managing customer expectations on what is free and what is paid for is important. Customers thought in SCE's program that the whole project was free. Average price comes to around \$31,000 and they dropped out. This can be prevented through upfront expectations management.

**PG&E:** We need to work with the vendor on this. Having a quoted price is one way, but it is a non-binding price and we need to communicate that. This is why messaging is very important and keeping things consistent. We have been keen on sample cost based on base cost when we deal with trial sites. It is clear that it isn't free. \$10,000 to \$30,000. If they're not willing, that is good to know.

### VENDOR UNIT VOLUME ESTIMATES

**Participant A:** For the service providers in room: Is there an effect on not knowing how many of the 7,500 program, how much success you will have? Does that affect your base cost pricing not knowing the number of units they will sell through the program?

**Participant B:** We do have various bulk-buy agreements with hardware partners. For this planning, knowing scale of deployment plays role in pricing with hardware partners and availability of equipment, there can be a long lead time for manufacturing. We are happy to discuss this.

**Participant C:** We asked when pricing, not only looking at EVSE type but volume of potential customers and the support this would require for back office or call center, response teams etc. Clarification was whether we include pricing for all support functions. We weren't assuming this was the same as other programs like Edison. We got response that we should include this in our pricing. We did the best job we could at estimating those costs.

### BASE COST

**Participant:** If base price moves you will have hosts in pipeline, with moving parts this will become difficult to attract and retain. If someone is getting a better deal through the program than someone else due to changing base cost or different deals with vendors, this is something to be aware of.

**PG&E:** Yes and this is a good process question. We want to lock in price for those who are in, for others who have delays this is something to address. We share this concern and we will discuss with commission and future PAC.



## 5. Load Management

COMMENT	RESPONSE
Do the changes in TOU rate periods affect demand charges as well as kWh charges?	The TOU period changes are for kWh charges; demand charges vary by season. The alignment change is proposed for non-residential rates. Residential rates have already shifted. Rate making is a long process, we pick up residential and non-residential rates in different GRCs. The TOU rate periods proposed are moving toward being beneficial for workplace charging.
How you are starting to talk about rates with initial site targets?	We are describing the rate process. We make clear that they are customer of record first. We aren't talking about rates but rather pricing. How you deliver pricing to drivers is dependent on site host, i.e. pass the rates directly through to drivers (Rate-to-Driver) or create their own pricing (Rate-to-Host). Options may include flat fee, free, flexibility and subject to the Load Management Plan.
Can you speak to how the reception has been from trial sites on rate information?	They are eager and just want to know more information about this.
Can you describe how you would complete the last point of payment or direction of customer payments? How to make that happen?	EVSPs are charging drivers for electricity they use through their normal process. We are leveraging the existing business process that EVSPs have for billing drivers and giving the money to the site host.
Did the BMW program use all three proposed frameworks for Load Management Plans?	No, this was separate program.
Does this apply to charging only? For storage to reduce load is that okay?	We could explore storage. It's more complicated and costly. We can consider this, but not sure how viable this is.
Could you clarify PDP and the other pilots? Do they look at wholesale energy signals?	Yes, PDP is open to everyone as a rate add on for day ahead notifications. The other two are based on the wholesale market, as is PDP. The DR program gets CAISO information and calls events. The supply side pilot is based on wholesale but will start with distribution component.

COMMENT	RESPONSE
Can you include what finances are available for load management for this program? Some customers can participate in the supply pilot, but not all. So are some guidelines for incentives available?	Yes. We can send info on existing programs. For a new potential framework, funding is still unclear.

Discussion:

ADDITIONAL PILOT PROGRAMS

**Participant:** I think it will be a combination of all three where a program will require some education and a carrot to opt in. Given what PG&E does and with BMW iChargeForward, how are you incorporating this into decisions on Load Management Plans? I reference BMW pilot because it was designed for an OEM. For charge network program, will be successful through designs and control strategies through service provides. Unless they coordinate there could be misalignment between control signals and pricing strategies. Depends on combination between automaker, EVSPs. Those signals should be harmonized, this is key for strategy, recognizing that there are multiple points of control.

**PG&E:** Communication is important and so is a financial signal. In the BMW pilot, we saw that people largely wanted to do the right thing, and incentives were a factor as well. We are looking at if we can do info, financial, or a combination. The heart of the question is there are lots of actors here.

**Participant:** As the market expands, we don't know how charging behavior will change. For lots of people, it's not voluntary to plug in regardless of peak time or peak pricing. Take this into consideration. We need tech that integrates solar storage management etc. so we need to futureproof whatever we do now to account for this.

**PG&E:** Your point is that mobility needs must always be met. This could be addressed in the Excess Supply pilot. So this is definitely happening in this space, the question is whether we do this in this program, and how we can learn and explore these options. We may not have a preference for how they curb load but we want to know how they are doing it. We are developing a common framework for EVSPs to send data to us on this.



## 6. Spirit of DAC

COMMENT	RESPONSE
Was there a reason you chose Fortune 500 over Fortune 1000 when deciding how to filter out companies within DACs that don't meet the spirit of the definition of DACs?	We can use the Fortune 1000. It was just the size, we are concerned about pushing people away but we can do Fortune 1000 if this is the best option.
How does this approach to identifying workplaces in the "spirit" of the definition of DACs compare to what is in the Edison program?	Edison doesn't have to do this "spirit" of question.
Is there any prohibition on governments that are located within DACs?	No, just Fortune companies.
If you end up going with Fortune 1000 and find you don't have uptake, do you have the ability to revisit this? You'll want this market and we don't know what the reaction will be.	Yes you're right, we will decide what the screen will be and will take the goals of the program and feedback to make this decision.

### Comments:

- We would prefer to do the Fortune 1000. This is a good solution.
- We have a Fortune 1000 preference and want to flag concern over subsidiaries and the need to track this effectively.
- Clarify that screens in other IOUs - they can choose between state wide or service territory. For comparison of PG&E with those two they don't need to add that extra spirit. It won't be a perfect comparison.
- To use the Fortune 500 or 1000 to screen out high revenue workplaces, you could also look for parent company as a solution to encompassing subsidiaries.

### Discussion:

#### DECREASED INCENTIVES FOR FORTUNE WORKPLACES

**Participant A:** Why is it a bad idea to incentivize workplaces in DACs to reduce emissions through participation in the program?

**Participant B:** We are hoping they don't get the higher subsidy which we hope will help MUDs and lower income areas to participate. The workplaces will still qualify for the program and are more able to pay.

**Participant C:** These companies will be able to participate regardless and we want to make sure the funds go to the right place.

### Additional comments submitted by PAC stakeholders, provided verbatim:

**Organization:** ChargePoint

**Organization representative:** Newonda Nichols

**Organization representative title:** Program Manager

### General Program Comments

We are concerned with PG&Es requirement for 5 chargers at MUD locations. It will be difficult to implement and may leave quite a few potential sites out of the program. We encourage flexibility in your approach (PG&E turned away a potential site host from the meeting, telling him they will NEVER consider less than 5 stations per site). A flexible approach may help them hit their goals if they encounter unexpected problems.

**Organization:** FreeWire Technologies, Inc.

**Organization representative:** Carolin Funk

**Organization representative title:** COO

### Site Selection and Construction

Developing a clear cost-benefit analysis for each site will be key to understand the impact of project funding.

### Load Management

Utilization of the charging stations should be considered when analyzing load management effects. A low utilization of a site would result in a small benefit for rate payers as an outcome of this program.